

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

15 SEP 1948

Date of writing Report... 4th Aug 48... When handed in at Local Office... 19... Port of... Liverpool  
No. in Survey held at... Birkenhead... Date, First Survey... 2/6/48... Last Survey... 30/7/48  
Reg. Book... 77732... on the... ss. TOMOCYCLUS... Tons Gross 10668 Net 6321  
Built at... Portland Or... By whom built... Kaiser Co. Inc... Yard No... When built... 1944  
Owners... Anglo Saxon Petroleum Co. Ltd... Port belonging to... London  
Electrical Installation fitted by... Messrs. G. Bullock... Contract No... When fitted... 1944  
Is vessel fitted for carrying Petroleum in bulk... Yes... Is vessel equipped with D.F. Yes... E.S.D. Yes... G.C. Yes... Sub. Sig. No

Have plans been submitted and approved... Typical plans of the Tankers... System of Distribution... Voltage of supply for Lighting... 120 AC.  
Heating... 440 AC... Direct or Alternating Current, Lighting... AC... Power... 15 AC... If Alternating Current state periodicity... 60 Prime Movers,  
has the governing been tested and found as per Rule when full load is suddenly thrown on and off... Yes... Are turbine emergency governors fitted with a  
trip switch as per Rule... Yes... Generators, are they compound wound... See Note... are they level compounded under working conditions...  
if not compound wound state distance between generators... and from switchboard... Where more than one generator is fitted are they  
arranged to run in parallel... No... are shunt field regulators provided... Yes... Is the compound winding connected to the negative or positive pole  
Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing... No... Have certificates of  
test for machines under 100 kw. been supplied... No... and the results found as per rule... Are the lubricating arrangements and the construction  
of the generators as per rule... Yes... Position of Generators... In main engine room starting platform.  
is the ventilation in way of generators satisfactory... Yes... are they clear of inflammable material... Yes... if situated  
near unprotected combustible material state distance from same horizontally... and vertically... are the generators protected from mechanical  
injury and damage from water, steam and oil... Yes... are the bedplates and frames earthed... Yes... and the prime movers and generators in metallic  
contact... Yes... Switchboards, where are main switchboards placed... In main engine room at starting platform.  
are they in accessible positions, free from inflammable gases and acid fumes... Yes... are they protected from mechanical injury and damage from water, steam  
and oil... Yes... if situated near unprotected combustible material state distance from same horizontally... and vertically... what insulation  
material is used for the panels... Dead front board... or synthetic insulating material is it an Approved Type... Yes... if of  
semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule... Is the frame effectually earthed... Yes  
Is the construction as per Rule... Yes... including accessibility of parts... Yes... absence of fuses on the back of the board... Individual fuses  
to pilot and earth lamps, voltmeters, etc... Yes... locking of screws and nuts... Yes... labelling of apparatus and fuses... Yes... fuses on the "dead"  
side of switches... Yes... Description of Main Switchgear for each generator and arrangement of equaliser switches... Triple pole circuit  
breakers for A.C. Generators, D.P. Circuit breakers for D.C. Generator.  
and for each outgoing circuit... Triple pole or double pole circuit breakers.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule... Yes... Instruments on main switchboard... 14  
ammeters... 5... voltmeters... 1... synchronising devices... For compound machines in parallel is the ammeter connected on the pole opposite to the  
equaliser connection... Earth Testing, state means provided... Earth testing lamps on D.C. and A.C. supplies  
Switches, Circuit Breakers and Fuses, are they as per Rule... Yes... are the fuses an approved type... Yes... are all fuses labelled as  
per Rule... Yes... If circuit breakers are provided for the generators, at what overload current did they open when tested... 150%... are the reversed current  
protection devices connected on the pole opposite to the equaliser connection... have they been tested under working conditions, and at what current  
did they operate... Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule... Yes  
Cables, are they insulated and protected as per the appropriate Tables of the Rules... if otherwise than as per Rule are they of an approved type...  
state maximum fall of pressure between bus bars and any point under maximum load... Are the ends of all cables having a sectional area of 0.04  
square inch and above provided with soldering sockets... Are paper insulated and varnished cambric insulated cables sealed at the ends...  
\* Generating sets consist of 400 K.V.A. alternators; 75 Kilo. Steam turbine engines are  
SS Kilo compound wound generators all mounted on common bedplate and  
driven by steam turbines.

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Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof Yes. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present. Yes, if so, how are they protected Flameproof fittings.

and where are the controlling switches fitted in accommodation outside space, are all fittings suitably ventilated Yes, are all fittings and accessories constructed and installed as per Rule Yes. Searchlight Lamps, No. of 2, whether fixed or portable portable, are their fittings as per Rule Yes. Heating and Cooking, is the general construction as per Rule Yes, are the frames effectually earthed Yes, are heaters in the accommodation of the convection type none. Motors, are all motors constructed and installed as per Rule Yes and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil Yes, if situated near unprotected combustible material state minimum distance from same horizontally — and vertically —. Are motors coupled to oil fuel transfer and unit pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment Yes. Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing No. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule No. Control Gear and Resistances, are they constructed and fitted as per Rule Yes. Lightning Conductors, where required are they fitted as per Rule —. Ships carrying Oil having a Flash Point less than 150° F. Have all the special requirements of the Rules for such ships been complied with Yes, are all fuses of the cartridge type Yes, are they of an approved type Cartridge type. Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships Yes. Are the cables lead covered as per Rule Yes. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule Yes, are they suitably stored in dry situations Yes. Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory Yes.

| DESCRIPTION<br>OF<br>GENERATOR. | No. of | RATED AT     |        |          |                   | DRIVEN BY     | WHERE DRIVEN BY AN INTERNAL<br>COMBUSTION ENGINE. |                      |
|---------------------------------|--------|--------------|--------|----------|-------------------|---------------|---|----------------------|
|                                 |        | Kilowatts.   | Volts. | Amperes. | Revs.<br>per Min. |               | Fuel Used.  | Flash Point of Fuel. |
| MAIN ...                        | 2      | 400 (500 KW) | 450    | 642      | 1200              | Steam Turbine |   |                      |
| %                               | 2      | 75           | 110    | 682      | "                 |               |   |                      |
|                                 | 2      | 55           | 120    | 458      | "                 |               |   |                      |
| EMERGENCY ...                   | 1      | 75 (98 KW)   | 450    | 120.5    | "                 | Oil Engine    | Diesel Oil  | Above 150°F          |
| ROTARY<br>TRANSFORMER           |        |              |        |          |                   |               |   |                      |

| DESCRIPTION.                     | KILOWATTS. | CONDUCTORS.               |  | MAXIMUM CURRENT IN AMPERES. |       | APPROX. LENGTH (lead plus return fast). | INSULATED WITH. | HOW PROTECTED. |
|----------------------------------|------------|---------------------------|--|-----------------------------|-------|---|-----------------|----------------|
|                                  |            | No. in Parallel Per Pole. | Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm. | In the Circuit.             | Rule. |   |                 |                |
| MAIN GENERATOR ... ..            | 400        | 1                         | 1000,000   | 642                         | 725   | 40                                      | V.C             | L.C.A          |
| " " EQUALISER ... ..             | 75         | 1                         | 1000,000   | 682                         | 725   | 45                                      |                 |                |
|                                  | 55         | 1                         | 750,000  | 458                         | 592   | 45                                      |                 |                |
| EMERGENCY GENERATOR ... ..       | 75         | 1                         | 106,000  | 120.5                       | 150   | 30                                      |                 |                |
| ROTARY TRANSFORMER: MOTOR ... .. |            |                           |  |                             |       |   |                 |                |
| GENERATOR ... ..                 |            |                           |  |                             |       |   |                 |                |

### MAIN DISTRIBUTION CABLES.

[illegible][illegible]

| ALL IMPORTANT MOTORS TO BE<br>ENUMERATED. | No. | B.H.P. |   |          |       |     |     |     |       |  |  |
|---|-----|--------|---|----------|-------|-----|-----|-----|-------|--|--|
| Eng. Room Vark Fans                       | 4   | 2      | 1 | 6530     | 3.19  | 19  | 60  | V.C | L.C.A |  |  |
| Air Compressor.                           | 1   | 5      | 1 | 6530     | 7.2   | 18  | 30  |     |       |  |  |
| Electric Tanning Gears.                   | 1   | 3      | 1 | 6530     | 4.5   | 18  | 20  |     |       |  |  |
| Eng. Room Belge Pumps.                    | 2   | 10     | 1 | 10,400   | 13.7  | 25  | 110 |     |       |  |  |
| Main Condensers, Bisc. Pumps              | 1   | 125    | 1 | 300,000. | 155   | 234 | 60  |     |       |  |  |
| Main Slack Tanning Gears                  | 1   | 5      | 1 | 6530     | 8.5   | 18  | 100 |     |       |  |  |
| Main Populene Motor Fan                   | 1   | 15     | 1 | 16500    | 21    | 34  | 75  |     |       |  |  |
| Lub Oil Services Pump.                    | 2   | 5      | 1 | 6530     | 7.1   | 18  | 60  |     |       |  |  |
| Supersolers                               | 1   | 2      | 1 | 6530     | 3.19  | 19  | 120 |     |       |  |  |
| Fri. Bull'smouth Pumps.                   | 2   | 50     | 1 | 66400    | 63    | 83  | 60  |     |       |  |  |
| Sieving Gears Motor                       | 2   | 30     | 1 | 33,100   | 43.5  | 55  | 165 |     |       |  |  |
| Main Condensate Pumps                     | 2   | 25     | 1 | 26,300   | 32    | 47  | 50  |     |       |  |  |
| Air Circulating "                         | 1   | 30     | 1 | 33100    | 39    | 55  | 90  |     |       |  |  |
| Air Condensate "                          | 1   | 16     | 1 | 16500    | 21    | 34  | 60  |     |       |  |  |
| Cooler Circulating "                      | 1   | 10     | 1 | 10400    | 13.7  | 25  | 60  |     |       |  |  |
| Fuel Oil "                                | 1   | 7.5    | 1 | 6530     | 10.5  | 18  | 45  |     |       |  |  |
| Forced Draft Fans                         | 3   | 50/20  | 1 | 66400    | 63/29 | 83  | 80  |     |       |  |  |
| Evaporator Feed Pumps                     | 2   | 1      | 1 | 6530     | 1.5   | 18  | 90  |     |       |  |  |
| Accommodable Vark Fans                    | 2   | 2      | 1 | 6530     | 3.1   | 18  | 50  |     |       |  |  |
| Fuel Water Pumps                          | 2   | 2      | 1 | 6530     | 3     | 18  | 90  |     |       |  |  |
| Refuge Compressor                         | 1   | 7.5    | 1 | 6530     | 10    | 18  | 125 |     |       |  |  |
| Bisc. Pump                                | 1   | 1      | 1 | 6530     | 1.55  | 18  | 150 |     |       |  |  |
| Sanitary "                                | 1   | 7.5    | 1 | 6530     | 10.3  | 18  | 125 |     |       |  |  |
| Drinking Water Pump                       | 2   | 1      | 1 | 6530     | 1.5   | 18  | 200 |     |       |  |  |
| Garage Pumps                              | 3   | 200    | 1 | 450,000  | 243   | 308 | 60  |     |       |  |  |
| Shipping "                                | 2   | 50     | 1 | 66400    | 63    | 83  | 45  |     |       |  |  |
| Fuel Oil Transfer. Pump                   | 2   | 20     | 1 | 16500    | 25    | 34  | 50  |     |       |  |  |
| Self Water Service                        | 1   | 10.5   | 1 | 6530     | 10.3  | 18  | 180 |     |       |  |  |



*All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.*

*The foregoing is a correct description.*

*Date.*

## COMPASSES.

40/44

407

*The nearest cables to the compasses are as follows:—*

A cable carrying 1.5 Amperes 10 feet from standard compass 7 feet from steering compass.

A cable carrying 0.2 Amperes had not feet from standard compass had not feet from steering compass.

*A cable carrying ..... Amperes ..... feet from standard compass ..... feet from steering compass.*

Have the compasses been adjusted with and without the electric installation at work at full power

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted Yes

The maximum deviation due to electric currents was found to be ..... degrees on ..... course in the case of the standard compass, and ..... degrees on ..... course in the case of the steering compass.

Date \_\_\_\_\_

Is this installation a duplicate of a previous case.

If so, state name of vessel

**Plans.** *Are approved plans forwarded herewith.*

If not, state date of approval.

**Certificates.** Are certificates of test for motors engaged on essential services and generators forwarded herewith

**General Remarks** (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

The electrical equipment of this vessel appears to be installed in accordance with American practice and with the typical plans of T2 Tankers. The details of this report were obtained from these plans & personal observation on board. It was noted that lighting sub-circuits are controlled by single pole switches and portable connections, switches and non-flameproof lighting fittings were installed in cargo hold deck spaces. The wiring in this space has now been altered to D.P. control with switches outside of space & all portable connections removed.

The generator, motor, control gears, transformers, switchboards, cables, etc. have been examined, tested, necessary repairs effected, insulation test carried out and found satisfactory.

The installation appears in good and efficient condition and that it strictly in accordance with the General Rules, it is, in my opinion, eligible to be accepted for classification.

Total Capacity of Generators..... 985 Kilowatts.  
 2 @ 400 kw., 2 @ 55 kw., 1 @ 75 kw.  
 (The 2-75 kw. Exciter are not included in total)

The amount of Fee ... .. £ 30 : 0 : 0 - 7 SEP 1948

Travelling Expenses (if any) £ ~~0~~ 0 0 :

LICENCE CASE.

### Committee's Minute

*Assigned.*

See Minute or Rpt. 9.

Surveyor to Lloyd's Register of Shipping.

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